Mount Baker-Snoqualmie National Forest
Specialist Report
Environmental Assessment
South Fork Stillaguamish Vegetation Project

Cultural Resources
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Applicable Laws, Regulations, and Policies

The following summarizes the major laws, regulations, and policies pertaining to culturalresources:

The National Historic Preservation Act of 1966, as amended in 2014 (NHPA)
Section 106 of the NHPA directs all federal agencies to take into account the effects of their undertakings on properties listed on or eligible for listing on the National Register of Historic Places (NRHP.)

The Archaeological Resources Protection Act of 1979 (ARPA)
The ARPA prohibits disturbance or removal of archaeological resources from federal lands without a permit from the responsible land manager. ARPA applies to both NRHP-eligible and non-eligible sites that are at least 100 years old.

National Forest Management Act of 1976 (NFMA)
The NFMA directs the Forest Service to develop renewable resource plans through an interdisciplinary process with public involvement and consultation with other interested governmental departments and agencies.

The National Environmental Policy Act of 1969 (NEPA)
NEPA provides for consideration of environmental impacts of federal projects and for public involvement in decision-making. Section 101(b)(4) of the statute declares that one objective of the environmental policy is to "preserve important historic, cultural, and natural aspects of our national heritage." Accordingly, NHPA Section 106 studies can be coordinated with the NEPA process.

The American Indian Religious Freedom Act of 1978 (AIRFA)
The AIRFA protects the rights of American Indian people to believe, express, and exercise their traditional religions. AIRFA allows access to sites, use and possession of sacred objects, and freedom of worship through traditional ceremonies and practices. It also requires a review, in consultation with American Indian leaders, of federal agency policies and programs to determine changes necessary to protect and preserve religious and cultural practices of American Indians.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA)
NAGPRA establishes the rights of lineal descendants and members of Indian tribes to certain human remains and precisely defined cultural items recovered from federal or Indian lands. NAGPRA also establishes procedures and consultation requirements for intentional excavation or accidental discovery of American Indian remains or cultural items on federal or Tribal lands.

Relevant Standards and Guidelines

Land & Resource Management Plan for the Mt. Baker-Snoqualmie National Forest Service

FEIS:
Chapter II-43: A cultural resource inventory (professionally supervised) will be performed on all projects, prior to any ground-disturbing activity, or modification or removal of older structures. Cultural properties that are identified will be protected until their significance has been evaluated, through consultation with the Washington State Historic Preservation Office (SHPO) and using the criteria for eligibility to the National Register of Historic Places. When sites are determined significant, mitigation measures will be developed in consultation with the SHPO, Advisory Council on Historic Preservation, and other interested parties, as specified in 36 CFR 800.

Chapter III-140: Management decisions concerning cultural resources will be made in a context of increasing public interest and involvement, with growing public appreciation of these resources contribution to community economies and identity. In response to these concerns, the amount of inventory not tied to specific development projects will increase, to equal or surpass the amount of inventory for development projects.

Management Plan:
Chapter 4 pages 97 through 99

36 CFR 800 provides guidelines for the implementation of Section 106 of the NHPA.

Section 304 of the NHPA provides for the confidentiality of cultural resource site locations.

36 CFR 60 provides criteria for evaluation for listing on the NRHP.

36 CFR 296 provides regulations for the implementation of ARPA.

43 CFR 10 Subpart B provides guidance for the implementation of NAGPRA regarding Human Remains, Funerary Objects, Sacred Objects, or Objects of Cultural Patrimony from Federal or Tribal Lands.

FSH 2309.12 provides the direction for the Forest Service Heritage Program.

Other Programmatic Direction

Section 106 compliance on the Mt. Baker-Snoqualmie National Forest (MBS) is accomplished through the terms of the 1997 Programmatic Agreement among the USDA Forest Service, Region 6, the Advisory Council on Historic Preservation, and the Washington State Historic Preservation Officer Regarding Cultural Resources Management on National Forests in the State of Washington (PA).

Definitions of Technical Terms

Terms used in regards to the NHPA can differ from those used in NEPA. The following definitions are from 36 CFR 800 regarding the implementation of Section 106 of the NHPA.

Area of potential effects (APE) means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

Eligible or *listed* refers to the status of any prehistoric or historic district, site, building, or structure in regards to the NRHP maintained by the Secretary of the Interior. A site may be either not eligible, eligible, or listed in the NRHP. Sites that are unevaluated are treated as eligible until a determination is made. According to the 2004 revised regulations [36 CFR 800.4(d)(1)] for the NHPA, sites considered not eligible for the NRHP may be directly affected once adequately recorded and evaluated, and concurrence is received from the State Historic Preservation Office.

Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria. This term would equate to "significant" archaeological or historic sites in regards to NEPA but does not equate to a determination of a "significant" impact.

Undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.

Management Requirements and Mitigation Measures

The following Standards from the Forest Plan, as amended (2005, 2005a), apply to all alternatives:

Mitigation Measure or Project Design Feature	Objective	Effectiveness and Basis	Forest Plan Standard & Guideline
Cultural Resources			
If a previously unidentified cultural resource is discovered during project implementation, the activity shall be stopped in the area of the find and a reasonable effort to secure and protect the resource be made. The Heritage Specialist shall be notified and the Forest would fulfill its responsibilities in accordance with the Programmatic Agreement and other applicable regulations.	Protect historic properties	Moderate (MBS Forest experience.)	Chapter 4-98,99
If human remains are discovered, all work must stop in the area of the discovery and NAGPRA protocols followed.	Comply with NAGPRA	Unknown	Chapter 4-98,99

Table 1: Design Criteria and Mitigation Measures

Analysis Methodology, Assumptions

Objectives

The primary objective of the analysis was to comply with Section 106 of the NHPA, whereas in accordance with 36 CFR 800.4(b)(1), federal agency officials shall make a "reasonable and good faith effort" to identify historic properties that may be affected by their undertakings. This required the delineation of an Area of Potential Effect (APE), a review of existing information, and consultation with affected tribes, and interested communities. The identification of significant archaeological, historical, and cultural sites helps guide the design of project activities so as to avoid adverse effects, wherever possible.

Methodology

Per 36 CFR 800.4(b)(1), appropriate identification efforts may include background research, consultation, oral history interviews, sample field investigation, and field survey.In 2012, the ACHP clarified that a "reasonable and good faith effort" does not equate to the ground verification of the entire APE, nor is there an expectation to locate all properties. Efforts should be devised to be neither excessive nor inadequate. For the purpose of this project, a careful consideration of the surface conditions and effectiveness of past survey efforts has guided the development of the methodology.

The project area has been the focus of archaeological survey for at least 38 years, covering a total of 6,610 acres on Forest Service land alone. During that time, only 25 sites have been recorded; however, only 6 of those were found through survey. The rest were identified through historical documentation or continuous site use. Some sites simply have resided in current memory of employees and informants. This equates to a return of less than1 site discovered per 1000 acres of pedestrian survey and only one of those was considered eligible for the National Register of

Historic Places (NRHP). Given that the primary purpose is to identify "historic properties," not to discover all sites, the rate of success for pedestrian survey is essentially nil. This is not an entirely new revelation as many reports of archaeological surveys within the Pacific Northwest rainforest areas have described similar lackluster results.

Away from permanent villages, both pre-contact and historic period Native American sites tend to be unobtrusive, mostly being discovered in the denuded areas such as lake and riverbanks, meadows, and disturbed clear-cuts or roadbeds. The probability of finding any logistical camps and even semi-permanent villages (as many had been burned and leveled) is heavily dependent on soil exposure and stability. Post-depositional processes within this landform are normally not conducive to discovering such sites that retain their integrity. Adding to the difficulty is the recent history of this particular project area, where all proposed treatment stands are designed within previous timber harvest units dating from the 1940s through the 1990s. Some units logged as recently as the 1980s show extensive ground cover and tree growth, and exhibit hummocky organic surfaces comprised of thick duff, downed wood, and surface vegetation. As most are on moderate to steep slopes, the probability of a unit containing significant past occupations are already low. Subtract from this the likelihood of locating such a site due surface conditions and past disturbance, and the expectations of discovery of unobtrusive sites becomes substantially lower. This is verified by the dreadfully low discovery rate seen in past surveys.

The following major factors were considered when developing the archaeological survey plan:

- All stands had been logged from 70 to 25 years ago.
- The depth of ground disturbance expected from modern logging would be at most the same as the previous logging efforts.
- The horizontal extent of the proposed logging would remain within the confines of these previous logging units and not extend substantially into undisturbed old growth areas.
- Past logging may have destroyed evidence of past activities in many areas.
- The nearly 4 decades of pedestrian survey has been statistically ineffective at identifying historic properties.
- 40%of the proposed treatment stands are within steep terrain(>35%).
- 32% of the proposed treatment stands are within moderately steep terrain (20-34%).
- A substantial amount of background information as well as remote sensing data was available for the analysis of the project area.

The project area was first evaluated using the MBS cultural resource database and SHPO records in order to determine known historic properties within the APE. Historical maps and GLO Plats were georeferenced and compared to planning area stands in order to determine known historical occupations or uses within the areas that have not yet been recorded. Mineral survey plats were also georeferenced to locate former historic developmentswhere timber management proposals overlapped known mining claims. Timber sale records were used to determine methods and dates of previous logging. LIDAR data was then used to locate features below the canopy including roads and landings not appearing on historic or modern maps. Canopy height LIDAR data also corroborated logging methods and boundaries of previous logging units, supporting assumptions about surface impacts from previous treatments in the project area. The compiled data was compared to historical narratives to pinpoint data gaps and focus survey efforts. Predictive models of both the MBS and the SHPO were examined to determine areas of high site

probability and compared to known sites and historically identified features. Stands that showed high predictive potential and were flagged for potential field survey. Those areas along the South Fork Stillaguamish River were given highest priority given the known focus of human activity both prehistorically and historically along that corridor. Additional attention was given to those areas of relatively low slope, which coincided with LIDAR features and/or historical features identified from maps.

Field survey was initiated at the reconnaissance level in accordance with FSM 2362.13a. As the primary purpose was to locate historic properties and not conduct statistical research on site distribution, survey was purposive. Those areas where ground conditions were not conducive to site discovery were dropped from further survey per FSM 2363.15. Soil testing was considered for site evaluation in areas that showed stable, accessible soils. However, as shovel testing has shown to be almost completely ineffective in site discovery on the MBS, it was not considered for use in site discovery. Most of the survey areas contained heavy duff and downed organic materials covering soil surfaces to a point well beyond the effective use of shovel probes. The expenditure of effort for shovel probes was considered far beyond the potential for a benefit.

Public Involvement

On March 1, 2016, scoping letters were sent to interested citizens, groups, industry, and agencies. The scoping period was extended another 30 days at the request of commenters. The Forest Service received 16 comments from interested parties. In October 2016, the MBS held a public field trip to the South Fork Stillaguamish Project Area to those who had expressed interest in the project. The purposes were (1) to illustrate the type of treatments being contemplated in the Proposed Action, and (2) to answer any questions the public may have.A follow-up contact was made to the Certified Local Government contact for Snohomish County on June 1st, 2016. No response was received.

Tribal Consultation

In December of 2015, the North Zone forest staff had conversations with staff of the Upper Skagit Tribe regarding Mt. Baker and Darrington Ranger District projects, including the South Fork StillaguamishVegetation Project.On February 26, 2016, the Forest Service sent consultation invitation letters to the Lummi, Nooksack, Samish, Sauk-Suiattle, Snoqualmie, Stillaguamish, Swinomish, Tulalip, and Upper Skagit Indian Tribes. Letters specifically asked for information regarding cultural resources, among other resources. In response to the concern for wildlife and riparian issues, Forest Service project personnel met with the members of the Tulalip and Stillaguamish tribes to discuss details of the project on May 10, 2016. No concerns were expressed over cultural resources. Follow-up contactswere made to the Swinomish Tribal Historic Preservation Officer (THPO), Stillaguamish THPO, and the Tulalip Cultural Resource Director on June 1, 2016. The Sauk-Suiattle were contacted again on August 1, 2016. The Samish and Swinomish Tribes were contacted again on August 29, 2016.

The THPO of the Stillaguamish Tribe and Vice Chair of the Sauk-Suiattle Tribe responded with requests for more information on August 24th, 2016. The draft proposed action and proposed road maintenance level maps were sent to them on August 25th. The Samish Tribe THPO responded on September 21, 2016 expressing no concerns with the project.

Affected Environment

Archaeological Setting

Paleoindian

The Cordilleran ice sheet precluded occupation within the Puget Sound lowlands prior to 13,600 years ago, but the Manis Mastodon in Sequim places humans immediately along the periphery of the Puget Lobe as far back as 13,800 years BP (Waters, et al. 2011). The subsequent Everson interval flooded most of northern Washington immediately following, making most of the area uninhabitable until around 11,300 year BP. As the glacial and marine environments gave way to grasslands and parks, humans quickly filled the niche. Where once there was no evidence of Paleoindian people in the Puget lowlands, the 2013 discovery of the Bear Creek site in Redmond, WA places humans within the Pleistocene/Holocene transition around 9,700 to 10,200 years BP (Kopperl, et al. 2015). Generally, these early transitional sites are rare and poorly represented, but their discoveries have been groundbreaking events that are redefining the conventional wisdom surrounding the inhabitation of western Washington.

Paleoindian technology has typically been associated with big-game hunting; however, a maritime migration and discovery of a nearly 14,000-year-old fishing weir seems to throw this assumption into disarray. Some toolkits are clearly associated with large mammal hunting, with little evidence of diverse plant use, but differential preservation of lithic materials has kept most of the story hidden. For instance, the Manis Mastodon holds a bone point technology, which is unlikely to preserve in most contexts. In any case, the period is dominated by nomadic camps of hunter-gatherers, of which little specific information is known.

Archaic

As the Western Washington environment opened up, Paleoindian technology gave way to a diagnostic bifacial/bi-pointed tool type that began to appear along post-glacial terraces from the Fraser River area, along the coast to the Columbia River, and eventually into the interior (Gibbons 1998, Butler 1965). Archaeologist B. Robert Butler attempted to classify the tradition into a broad conceptual framework of the "Old Cordilleran Culture" with early, middle, and late periods (Butler 1965)to varying degrees of success. Other terms for the period include Cascade culture and Pebble Tool Tradition, referring to often-blurry lines of variation and overlap over an expansive region. The taxonomic designation generally refers to the period between the Paleoindian and Pacific periods ranging from about 9,000 to 4,500 years BP within this part of Washington. The local manifestation is the Olcott tradition, identified by the type-site at the confluence of Jim Creek and the South Fork Stillaguamish River, southeast of Arlington, WA. This period is generally known to be an unspecialized hunter-gatherer period focused on land-based subsistence, and not a maritime tradition (Butler 1965). Olcott sites have been found on the east side of the Olympic Peninsula, the San Juan Islands, suburban Seattle, and as far south as Tacoma; but the largest appearance found to date is overwhelmingly centered along the South Fork Stillaguamish River between Granite Falls and Arlington.

Old Cordilleran gave way to a specialized foraging model around 5500 BP, prompting the development of coastal, riverine, and montane settlements. The changes formed the basis of the modern linguistic and biological lineages along the Pacific Coast(Ames and Maschner 1999).

Whether these cultures evolved from the Olcott or other preceding societies is a matter of debate. Nevertheless, there is little evidence of outside incursion or major migrations until European contact in the 18th century (Ames and Maschner 1999).

Coast Salish

Over the following millennia, northwestern cultures evolved into distinctive groups, including the Coast Salish. The Coast Salish designation represents a language group that encompasses an extensive and diverse area. The individual communities produced a wide array of technologies and adaptation to their niches within the developing rainforests, river systems, and coastlines. They established territories, complex political systems, and extensive trade networks. By approximately 1500-1700 years BP, the Coast Salish had developed societies that would be consistent with what was eventually observed by European Explorers in the 18th century (Ames and Maschner 1999).

The Coast Salish have been described as affluent foragers given the abundance of resources and relatively mild environment. Unlike other hunter-gatherer societies in North America, there was little need to migrate great distances. Villages could be established permanently and occupied year-round or for the majority of a season. "During the summer, single families would leave the winter villages and travel to selected locations to hunt, fish, and gather wild plant resources. Several families might gather at such locations and erect separate and temporary dwellings(Blukis-Onat and Hollenbeck 1981)."Coastal villages tended to be occupied year-round, with some of the larger villages having been described as being occupied continuously for 600 years (Harris 1994); showing a remarkable persistence and stability of tradition despite the dynamic volcanic and seismic environment. "The largest villages were located at sources of fresh water along the coast; other large villages would be found at the mouths of rivers, at tributaries, and on lakes and prairies with easy access to a year-around food supply. They were placed for protection from the winter weather and high water, and ease of transportation up and down the major waterways(Blukis-Onat and Hollenbeck 1981)."

Archaeological evidence shows that a "distinct difference in the tool inventory existed between coastal and upriver people in the much greater use of chipped stone tools away from marine waters. A lithic tool industry was very well developed in the upriver areas. Possibly the greater emphasis on these tools is associated with the greater reliance on land mammal hunting in this inland area and/or availability of materials (Blukis-Onat and Hollenbeck 1981)." It is also possible that the preservation of organic materials is less favorable in the upland environments.

Contact Period

In the late 18th century, the complex equilibrium of the Coast Salish societies began a sudden and tragic decline as fur trade interests drew numerous European explorers to the region. In 1774, Spanish explorer Juan Perez reached Nootka Sound on Vancouver Island, followed in 1778 by British Explorer James Cook (Cameron, et al. 2005). Although direct contact with the native peoples was limited, by the time George Vancouver made diplomatic contact in 1792, disease had already ravaged the population. One account suggests that smallpox was first introduced by the Spanish Heceta/Quadra expedition of 1775, killing one third of the native population (Cameron, et al. 2005). A successive smallpox event entered from the east in the winter of 1782 (Harris 1994). Outbreaks of smallpox and measles continued to ravage the populations in 1824-

25(Cameron, et al. 2005), and 1836-1838(Ames and Maschner 1999), while malaria affected those along the Columbia River around 1830(Cameron, et al. 2005). The Hudson Bay Company eventually vaccinated against smallpox, stopping the 1853 and 1862 outbreaks in the southern Puget Sound area, but the death toll was still high among the northern villages such as the Lower Skagit (Cameron, et al. 2005).

Although the accounts and dates of the epidemics are varied and true death tollsare unknown, the result is indisputable. Based on population models, it is believed that 90% of the overall Pacific Northwest population may have been lost during the century of epidemics(Ames and Maschner 1999). The vast network of interrelated societies persisting for thousands of years had collapsed in advance of a major colonial migration. What was known of the Coast Salish by the time American colonial interests took hold in the 1840s is only of a devastated people still attempting to recover from a systemic trauma that disrupted everything in their world.

Reservation/Post-Reservation Period

After the fall of the fur trade in the 1840s, American colonization in the northwest was slow to progress. To encourage migration, the Donation Land Act of 1850 (predecessor to the Homestead Act) was enacted to allowed settlers in the Oregon Territory to claim lands for free provided that they live and work on it for 4 years. However, the Non-Intercourse Act of 1834 kept American settlers from claiming Indian lands in absence of a treaty. To facilitate settlement, the territorial governor Isaac Stevens gathered many of the indigenous leaders to sign away their land titles through a series of treaties. One result of the treaties was the artificial simplification and delineation of tribal entities from a complicated system of interrelated villages and territories. "Prior to historic contact it would have been difficult to draw specific boundaries between the territories of each of the named groups(Blukis-Onat and Hollenbeck 1981)." Generations of population decline resulting from disease had reduced the once complex and stable territorial organization to a scattering of remnant villages. Stevens grouped the villages under single leadership designations that represented entire regions and pressured them to sign over millions of acres of their ancestral homelands. After the signing of the Treaty of Point Elliot and the Medicine Creek Treaty, the Coast Salish of the Puget Lowlands from the Cascade crest to the Puget Sound, and the White River to the Canadian border, were consolidated and relocated, or at least that was the intent.

The result was not as simple as Stevens had hoped. Unlike many of the later treaties among the Plains and Southwest tribes, the Washington treaties were not signed after a conquest. These were not a broken or defeated people signing as a means of surrender. The Coast Salish insisted on certain terms that guaranteed rights to continue to hunt and fish on traditional lands and they held fast to their expectations. Some were unhappy altogether with the treaty, having not been afforded proper reservations (i.e. the Nooksack, Stillaguamish, Duwamish, and Snoqualmie, to name a few) and simply refused to move from their lands. Other tensions arose from the failure of Stevens to follow through on the gifts promised. Adding to the distrust, those who were tasked with delivering the provisions often skimmed from the supplies (Cameron, et al. 2005). Tensions reached a head when some of the southern Sound tribes, particularly those of the Medicine Creek Treatyarea protested the bad-faith taking of prime farmland. Nervous settlers formed militias and attempted arrest Nisqually Chief Leschi, which spurred the Puget Sound War. Stevens escalated tensions by forcefully removing thousands onto ill-supplied reservations,

until eventually calling for the extermination of all “hostile” Natives, and declaring martial law.Fratricide ensued as Stevens offered a bounty on scalps. The end of hostilities had firmly established the dominance of the new American presence in the region, andset the tone for the next century of contentious and distrustful relationships.

The long-term consequence of the reservation period is not easily summarized. Those villages who relocated took on the association of the reservations, such as the Tulalip Indian Tribes comprised of former Snohomish, Skagit, Stillaguamish, Duwamish, Suiattle, and Snoqualmiedescendants. The Swinomish reservation took on Stillaguamish, Lower Skagit, Upper Skagit, Kikiallus, and Samish peoples. Those who did not move held fast to their treaty rights but attempted to hold on to traditional village sites as well. This has met with varied success. Most of the “landless” tribes have been battling in courts for more than century to gain or hold their federal recognition despite being recognized as signatories to the treaty. Federal recognition of the Nooksack in 1971, and the Stillaguamish in 1979 marked a change for those off-reservation communities. The Snoqualmie lost recognition in 1953 and regained it in 1996. The Samish suffered similar setbacks having gained recognition in 1966, lost it in 1969, and regained it in 1996. The Snohomish and Duwamish have not been so fortunate, still struggling to gain federal recognition. More than 160 years has passed and the effects of the treaty have still not stabilized. The legal identities have fluctuated for many during that time, as have the execution of rights. The Boldt Decision in 1974 affirmed a century-long battle over the fishing rights of the signatories, but the tribes continue to bring lawsuits to ensure the retention of those rights. After a long history of trauma, reorganization, and broken promises, none of the Coast Salish peoples take their rights or legal identities for granted.

This is a gross simplification of the widespread disruption of what had been the multi-generational development of familial, economic, and political ties. It does not include many considerations such as the granting and cancelation Indian Allotments, the acquisition of Forest Reserves, mistreatment of indigenous people on the reservations, impact of modern commercial industries on villages, etc. Each is the subject of volumes of written material and cannot be summarized with any justice to their complexity of modern ramifications.

Historical Period/Industrial Period

As described in the preceding section, the American settlement in the South Fork Stillaguamish area is hardly the beginning of human influence in the South Fork Stillaguamish valley. Human habitation at the portage of the Stillaguamish and Pilchuck Rivers began as early as the Olcott period and persisted well into the contact period. However, the industrial era that followed the reservation period marked a substantial transition from what was a soft touch on the landscape to an American Victorian ideal of dominance and extraction.

For a long time after the initial wave of homesteaders, the South Fork remained mostly untouched. The majority ofAmerican settlement into the new territory began along the coast, slowly pushing inward as populations grew and economies diversified. Timber originally drove the migration. Booming demand in California kept prices high during the early years, and the Puget lowlands provided both an inconceivable amount of treesas well as an easy means to transport them to the sea along the prominent rivers. By 1883, the first settlers began moving into what would become Granite Falls, the easternmost non-indigenous settlement in this part of

the Puget lowlands (Cameron, et al. 2005). As the timber market slumped, it was the discovery of precious metals that maintained this eastward momentum.Beginning with the discovery of gold in 1889 by Joseph Pearsall, the South Fork, and by connection the rest of Snohomish County boomed(Woodhouse, Jacobson and Petersen 2010). This was not so much a result of the value of the gold, but rather the optimistic investment that came with it. The discovery of precious metals along the river, coupled with the entry of the Great Northern Railway into the territory promised opportunity for investors who could get in at the ground level. The Wilmans-Bond Group purchased Pearsall's "Monte Cristo" mine claims, while investors Colby, Hoyt, and Hewitt purchased land at the mouth of the Snohomish River in hopes of developing a rail terminal (Woodhouse, Jacobson and Petersen 2010). The two groups worked together to convince wealthy industrialist John D. Rockefeller to fund the construction of a railroad to haul ore from the mines to the fledging town of Everett. During the survey of the possible routes, options were considered along the South Fork of the Sauk River and northward; but the Chief Engineer M. Q. Barlow had found that using Barlow Pass to the South Fork Stillaguamish would avoid cutting through the divide (Woodhouse, Jacobson and Petersen 2010). This had the added benefit of routing the line through new ore discoveries in the Silverton and Pilchuck areas (Woodhouse, Jacobson and Petersen 2010).

The Everett and Monte Cristo Railway beganconstruction in 1892, and with it came other pursuits. Homesteaders began to settle along the corridor with the first mineral prospects, followed shortly by corporate logging operations. Small industrial communities began to spot the valley. The railway opened its mill past Silverton at Perry Creek as early as 1895 to support its own timber needs (Majors and McCollum 1977). The Canyon Lumber Company founded the community of Robe in 1900 (Woodhouse, Jacobson and Petersen 2010), followed by the Everett Cedar Lumber Company that operated a shingle mill in the Gold Basin area from 1909 to 1913 (Majors and McCollum 1977). At nearby Black Creek, the Moose Shingle Mill was in operation from 1913 to 1919 (Majors and McCollum 1977). The Rucker brothers built the Tulalip Mill in 1918 near Silverton (Woodhouse, Jacobson and Petersen 2010).

Despite high hopes and tremendous investment in maintaining rail access, the mines began to falter. In 1903, the Monte Cristo mines and smelter were purchased by a competitor (ASARCO of Tacoma,) and were immediately shut down (Woodhouse, Jacobson and Petersen 2010). Silverton mines began to show financial weakness as well. Nevertheless, communities were still developing in the valley supported by recreation and timber. Lumber and shingles were once again in high demand, and shingle mills continued to rely on the railway.

Mining lingered a few years more in the Silverton area, but overall the industry lacked the strength to maintain the railroad on its own. After the Northern Pacific Railroad purchased the Everett and Monte Cristo Railway, they struggled to repair and maintain the line to its end. Continued landslides and weather problems were a constant threat, and communities and industries suffered under the inconsistent travel provided by a defunct system. In fear of losing access to their timber operations, the Rucker brothers leased the line in 1915, buying it in 1925 (Woodhouse, Jacobson and Petersen 2010). By that time, automobile roads proved more versatile for what lingering demand for timber remained. The Rucker brothers abandoned plans for a second mill and attempted to diversify interests in the valley by constructing a recreational resort near Big Four Mountain, the Big Four Inn. By 1930, both their timber interests and the

Big Four Inn were abandoned when the railroad was again damaged by flooding (Majors and McCollum 1977).

Forest Service

In 1897, unclaimed land within the state was set aside as Forest Reserves, beginning a longrelationship between the federal government and the logging industry. In 1905, the reserves were put under the control of the US Forest Service as the Washington National Forest.The South Fork Stillaguamish River lies within an area separated from the Washington National Forest as the Snoqualmie National Forest in 1908. Originally, the valley was within the Silverton Ranger District, in 1933 renamed the Monte Cristo Ranger District and taken into the Mt. Baker National Forest.

During the formative years of the Forest Service, forest management was performed at a local levelwith series of ranger stations and ancillary guard stations. Some of the former stations within this area include the Silverton Ranger Station (1908), Pilchuck Guard Station (built in 1909), and Gold Basin Ranger Station (1917-1927). The stations were connected via phone lines to a series of fire lookouts and occasionally directly to timber units. (Old telephones have been occasionally found nailed to trees in the South Fork Stillaguamish area.) The Silverton Ranger Station was also the site of one of the few early Forest Service tree nurseries meant to reestablish new plantings following a logging or fires. In 1912, seedlings from Silverton were used to reestablish burned stands at Buck Creek and Perry Creek, and were subsequently burned over in 1914 (D. A. Cameron 1979). Low timber values, intermittent rail service, and failed crops eventually forced the closure of the station.

The 1930s saw drastic changes for the Forest Service, evidence of which is still found in the South Fork Stillaguamish corridor. During the Great Depression,Franklin Delano Roosevelt formed the Civilian Conservation Corps (CCC) on the back of the Department of the Army, which aided many national forests in the construction of much-needed infrastructure.The closest main CCC camp to the project area was located in Darrington, but a side camp was set up at the site of the Verlot complex in 1936. Camp Verlot projects included the construction of administrative facilities, campgrounds, and trails, many of which form the basis of the modern recreational and administrative footprint of the Forest Service. Of those improvements, only two remain,the Verlot Ranger Station and the Mountain Loop Highway. Constructed from 1936 to 1938, the Verlot station served as the center of the Monte Cristo Ranger District until the merging of the district with Darrington. The Mountain Loop was also constructed from 1936-1938, formed from the remnant tracks of the Everett and Monte Cristo Railway and segments of the original wagon road along the South Fork and the Sauk River.

After the end of the Depression, lumber values again improved and logging resumed. With new CCC truck trails and advances in logging technology, the valley was opened to clear cutting at a scale unseen in the past. While post-war recreational interest took hold in the lower valley, the upper slopes fell to timber demand well into the modern era.

Tribal Traditional Uses

The 1974 Indian Claims Commission report described aboriginal territory of the Stillaguamish (Boldt 1974)as including the area now being studied for the South Fork Stillaguamish project.

However, historically they had little presence beyond a fishing site near Granite Falls (Blukis-Onat and Hollenbeck 1981). Most of their historical villages ranged between Jim Creek on the South Fork, and Stanwood. In earlier records, a subgroup of the Stillaguamish called the Whetl-ma-mish appeared on maps, but by 1858, the name was no longer used (Blukis-Onat and Hollenbeck 1981). It is likely that the Whetl-ma-mish were absorbedinto the Stillaguamish as many villages had been coalesced during the treaty times. In addition to the known presence of a sub-group, it is also apparent that the Stillaguamish have a less prominent connection to the South Fork drainage above Granite Falls than did other groups. The riveris within an overlapping region of traditional use by many affiliated villages, including Sauk, and eastern groups of Chelan and Wenatchee (Bruseth 1926).

During the earliest periods of American incursion, the montane region of the South Fork remained relatively free from development until the discovery of gold. Many indigenous people continued traditional gathering practices while also performing incidental work for ranchers and others down river (Bruseth 1926). Members of the Sauk-Suiattle and Stillaguamish were known to have used this part of the drainage (and its tributaries) for the hunting of elk, goats, marten, etc. during the post-treaty period. The area was also used for the gathering of huckleberries, blackberries, roots, and other valuable plant resources. Cedar was particularly indispensable for many traditional practices including weaving baskets, nets, and mats, building lodges, and carving canoes. As large cedar trees became rare in the lowlands, the upper river valleys such as this served as valuable places to retrieve wood and bark. The valley also served as a portage route from the Sauk River to the Stillaguamish at Barlow and Squire Passes (Blukis-Onat and Hollenbeck 1981).

Apart from the natural resources, the spiritual value of the area extends farther than just the local settlements. The mountains and associated features are the source of numerous legends and stories from the coast to the eastern basin. The mountains also serve as a place for spiritual practices such as bathing, questing, and plant gathering. Some plants used in medicines and rituals were not available in the marine environments, requiring coastal groups such as the Samish to travel to the interior seasonally (Blukis-Onat and Hollenbeck 1981). (One large gathering area of importance to the Samish has been identified within the project analysis area. The location will not be disclosed in this report.)

Generally, the permanent, semi-permanent, and aggregate villages were located outside of theSouth Fork valley in places such as the portage at Granite Falls, or the Sauk Prairie to the north. However, the Stillaguamish had identified one prominent village site that may have also been a cemetery, upstream from Robe Canyon (Blukis-Onat and Hollenbeck 1981). The general area has been mostly developed by later construction and evidence of its remains are currently lacking. With that exception, it appears that the recorded traditional uses of the valley were generally transient, related to hunting and gathering by visiting groups from the east, or those using the valley for portage to the lowlands. As the natural environment fell to increased development and extractive industries such as mining and logging, its value for hunting and gathering declined. The remaining indigenous residents aided in the removal of cedar, but it was then as part of the shingle mill industry and not for traditional practices.

Literature Review

Previous Cultural Resource Surveys

Since 1978, 67 cultural resource surveys have been conducted within and around the current APE. The following is a summary of previous survey activity in within the project analysis area:

Year	Project Name	FS Number
1978	Gordon Vista Timber Sale	R1978060500025
1978	Long Creek Timber Sale	R1978060500027
1980	Hempel Creek Campground Reconstruction	R1980060500009
1980	1980 Herbicide Project	R1980060500016
1980	Cedar Flats Timber Sale	R1980060500022
1980	Goodbye Timber Sale	R1980060500024
1980	Timbuckto Timber Sale	R1980060500030
1980	Black Bear Timber Sale	R1980060500210
1981	Red Bridge Campground Reconstruction	R1981060500021
1981	Stalwart Timber Sale	R1981060500031
1982	Big 4 Interpretive Trail/Parking	R1982060500010
1982	Green Split Twin Creek Rock Three Tree Cedar	R1982060500031
1982	Lignite Timber Sale	R1982060500037
1984	Beak Cedar	R1984060500017
1984	Lower Cedar	R1984060500029
1984	Two Tree Cedar	R1984060500101
1985	Highjack Salvage Sale	R1985060500026
1985	Ski Run Clearing TS Liftand Parking Lot Construction	R1985060500049
1988	Darrington 1988 Cedar Sale Program	R1988060500005
1988	Third Banan Salvage Timber Sale	R1988060500009
1988	Flat Salvage Timber Sale	R1988060500020
1988	Heather Lake Trail Reconstruction	R1988060500022
1989	Darrington 1989 Cedar Sale Program	R1989060500022
1991	Cedar Sale Program 1991	R1991060500008
1991	Constant Channel Excavation	R1991060500010
1992	Deer Thin Timber Sale	R1992060500029
1992	Gold Basin Trail,Dump Station,Restrooms,Water System	R1992060500030
1993	Big Four Interpretive Trail/Parking	R1993060500010
1993	Romtechs Red Bridge/Coal Lk	R1993060500022
1993	Romtech Installation/TrailConst - Verlot	R1993060500024
1994	Coal Lake Barrier-Free Access Trail	R1994060500006
1994	Romtechs Red Bridge/Coal Lake	R1994060500022
1994	Camp Silverton Water Project	R1994060500025
1996	Deer Creek Road #4052	R1996060500024
1997	Dispersal Habitat Treatment For Spotted Owl	R1997060500003

1997	Stilly And Sauk Toilet Replacement	R1997060500019
1997	Pilchuck Communication Site	R1997060500029
1998	Pilchuck Rd And Trailhead	R1998060500031
1998	Gold Basin,Verlot,Turlo Campground Repairs	R1998060500034
1998	Big 4 Ice Caves Trail #723	R1998060500041
1999	Verlot Septic System Replacement	R1999060500012
1999	Verlot Septic System Replacement Monitor	R1999060500037
2003	Verlot Driveways	R2003060500012
2003	Red Bridge Campground Repair	R2003060500017
1003	Heather Lake Trailhead Toilet Replacement	R2003060500021
2004	Waldheim Slide Geotech Drilling	R2004060500033
2005	Mt Pilchuck Communication Site Veg Mgmt.	R2005060500003
2005	Future Fish -Culvert Replacements	R2005060500004
2005	River Road 4037 ERFO (Mp.7)	R2005060500007
2005	Verlot Restrooms Repair	R2005060500017
2006	Mt Loop Highway Enhancement Projects - Trailheads	R2006060500007
2006	Gold Basin Campground, Maintenance Water Line Repair	R2006060500034
2007	Little Beaver Cr Culvert Replacement Amendment	R2007060500025
2007	Marten Creek Bridge Replacement-Snohomish Co	R2007060500033
2008	Hemple Road 4009 Erosion Control	R2008060500004
2008	Gold Basin Campground Road Repair ERFO	R2008060500015
2008	Red Bridge Campground Road Repair ERFO	R2008060500016
2008	Turlo Campground Road 4002 Repair ERFO	R2008060500017
2008	Ice Caves Trail Bridge ERFO	R2008060500034
2008	Marten Creek Erosion Phase 2	R2008060500060
2008	Big Four Culvert Replacement	R2008060500061
2009	Jarsk Creek Culvert Replacement	R2009060500006
2009	Bear Lake Rd 4021-Black Cr Br- MP 1.5 & 1.7	R2009060500029
2010	Canyon Creek Road Treatment	R2010060500012
2010	Boulder & Park Cr Campgrounds Toilets Area	R2010060500041
2010	Mountain Loop Bank Repair Benson & Hemple Creek	R2010060500046
2015	Gold Basin Habitat Restoration Project	R2014060500050

Previously Recorded Cultural Resources

The following cultural resources have been recorded within the project analysis area. Only the six highlighted sites were discovered by survey. The rest of the sites have been actively occupied or identified through historical research.

FS Site #	Site Name	Eligibility	In APE?
06050200060	Gold Basin and Hempel Homestead	Not Eligible	No
06050200061	Silverton Ranger Station	Not Eligible	No
06050200062	Tulalip Co. RR Spur and Pole Road	Not Eligible	No

06050200064	Big Four Inn Complex	Not Eligible	No
06050200109	Black Creek Bridge	Not Eligible	No
06050200137	Monte Cristo RR Log Culvert	Not Eligible	No
06050200241	Silverton/Waldheim Outdoor Ed Camp	Not Eligible	No
06050400027	Gold Basin Lumber and Shingle Co. Mil	Not Eligible	No
06050700107	Marten Creek Bridge No. 562	Not Eligible	No
06050200053	Coal Lake Trail	Not Eligible	Yes
06050200063	Silverton-Barlow Pass Trail	Not Eligible	Yes
06050200090	Clear Creek Wagon Road	Not Eligible	No
06050200092	Barlow Pass Guard Station	Not Eligible	No
06050400172	Hempel Creek Mill	Not Eligible	No
06050200065	Everett and Monte Cristo Railway	Unevaluated	No
06050200043	Verlot (Monte Cristo) Ranger Station	Listed	No
06050200072	YMCA Camp	Not Eligible	No
06050200139	Mt. Loop CMT (Marker Tree)	Unevaluated/Tribal Importance	No*
06050200071	Lake 22 Lithic Scatter	Eligible	No
06050200066	Big 4 Homestead	Not Eligible	No
06050200070	North Fork Trail Shelter	Not Eligible	No
06050400028	Gold Basin Flume	Not Eligible	No
06050200046	Rotary Creek Road	Not Eligible	No
06050200047	Spithill Mill	Unevaluated	No

*Denotes that the site was removed from the proposed action

In addition to the previous compliance-related surveys, the area has been the subject of a considerable amount of historical scrutiny resulting in numerous publications over the years. Many publications are centered on the one prominent site that is not within a close proximity to the project analysis area, the Monte Cristo town site. Despite being well outside of the planning area, the Monte Cristo town site represents the primary impetus for pushing into the valley via train. All other historical developments from logging, tree plantations, shingle mills, recreational resorts, etc. extended from this initial development.

Current Survey

From May through October 2016, Forest Archaeologist Paul Alford and archaeologist Salvatore Caporale conducted pedestrian survey of 1240 acres of the South Fork Stillaguamish project area. The survey resulted in the identification of 1site and 2 isolates.

Isolates:

Isolate 06050200247 is a tail hold stump. The tail hold is a logging feature used for anchoring cables during yarding operations, typically used up until the 1950s. The feature is comprised of a stump and a steel cable that was prevented from slipping by the use of 19 rail spikes. The tail hold is located within a former cutting unit dated to 1950. The feature is not eligible for the NRHP.

Isolate 06050200253 is tail hold comprised of a large first-growth cedar stump with springboard notches, exhibiting 3 rail spikes to secure a steel choker cable. The unit was cut in the 1950s; the exact date is uncertain. The origin of the stump is likely from the late 19th early 20th century period of shake bolt logging and unassociated to its use as a tail hold during mid-century logging. The feature is not eligible for the NRHP.

Sites:

Site 06050200251 is the site of the Mountain View and Esmeralda Lodes of the Bonanza Mine complex in the Stillaguamish Mining District. The mines (MS694A) were first patented in 1903 as an extension of a group of related patents belonging to the Bonanza Queen Mining Company. The site was a copper lode-mining operation with an adit, a compressor house, and two bunkhouses as indicated by the 1902 mineral survey. It was meant to be supplemented by the construction of a nearby mill site (MS694B); however, the company lacked the capital to develop the site further. The entire Bonanza property group was sold in 1919 to the MNR Mining Company but was not further developed after that time. It was eventually purchased by the Mt. Baker-Snoqualmie National Forest in 2000. The site was determined through consultation with SHPO to be *not eligible* for the NRHP.

The Mountain View and Esmeralda Mine was initially encountered early in project planning. Consequently, it was buffered from project activities pending its evaluation and determination of eligibility. It is not within the project APE.

Environmental Effects

The analysis area for direct and indirect effects onculturalresourcesis variable by type of site and impact. Physical effects can be to the physical features of the site thus limited to the site itself, while visual impacts can affect the integrity of a site and its setting, thus can extend a great distance. Each significant cultural resource would require its own analysis boundary depending on the affect, site type, and its location.

No Action Alternative

Vegetation Management Activities

Under this alternative, no vegetation management activities would occur. This alternative would have no direct or indirect effects on significant cultural resources. No mitigation activities would be necessary.

Road Maintenance Levels

Maintaining the current road system would not have direct effects as common maintenance activities generally do not have the potential to effect historic properties.

Indirect effects could result from the continued degradation of the road system. As it stands, the current road system is of a size, complexity, and utility beyond the ability of the Forest Service to manage. The failure to maintain the road system as it is currently designated would allow the continued failure of the existing network through ditch and culvert blockage, loss of surface grade, vegetation growth, washouts, etc.The loss of portions of a road network can eliminate access to significant historical, archaeological, and cultural sites. In the case of historical and

cultural sites, this effect can be considered adverse, as it denies the public an opportunity to experience their heritage, or denies tribes and communities access to areas of traditional cultural importance. Loss of access could also pose problems for the monitoring and management of sites. By contrast, those sites that are at risk to looting, such as archaeological sites, would benefit from a lack of access. The greatest direct risk posed by the no action alternative is the loss of integrity to roads that are by themselves considered significant cultural resources. In this case, the damage would not be the result of an agency undertaking, rather the result of inaction, thus violating Sections 106 and 110 of the NHPA. In the case where the road itself is a significant site, this damage would be considered "demolition by neglect" and thus would be an adverse effect (per 36 CFR 800.5 (a)(2)(vi)). None of the roads within the project proposal are considered significant sites.

The consideration of these effects is mostly an academic exercise as most of the roads in the project area are currently not passable. The "no action" alternative would not change this situation, thus it poses no actual risk to the access of significant sites.

Proposed Action

Commercial Timber Harvesting

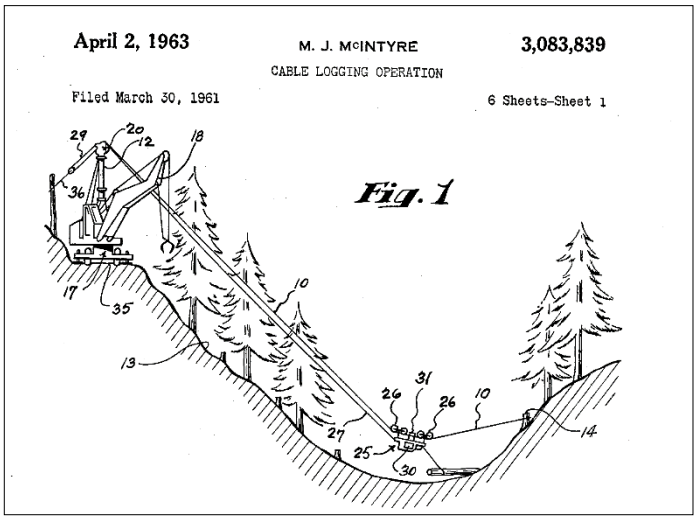

Figure 1. Cable Logging Patent Drawing. One example of cable logging techniques that affected the ground surface.

Direct Effects

Commercial thinning of trees would use a variety of mechanical logging systems, which can vary in their degree of impact. Some impacts could result from felling of trees, but most impactsare derived from the removal of timber from the cutting unit. Past studies on effects to archaeological sites from logging systems have verified the obvious disturbances of breakage, exposure, and displacement. With tree felling, the affect is fairly direct, such as a tree falling on a standing structure. However, there are too many variables to consider to attempt to derive specific impacts given any and all situations when it comes to yarding. In logged units from the 1980s within the project area, cable yarding in clear cuts concentrated impacts where logs were dragged to landings along set skid paths (Figures 1 and 2.)Thinning as opposed to clear cutting can have a similar effect when skid trails concentrate paths around the remaining trees. With skyline yarding, ground impacts are minimized when logs are not dragged. Thus, the degree of impacts resulting from skidding can vary from method to method, and are further dependent on slope, soil conditions, erosion potential, equipment used, etc. Thesimplest assumption is that artifacts can be dislodged, broken, and displaced. Lithic materials generally fare better in preservation but can suffer more impact breakage from hard strikes and pressure from skidding, vehicle tracks, and tires. Organic materials such as bark netting, baskets, mats, etc. are less effected by compaction from vehicle weight, but are less resistant to weather once

exposed on the surface. Displacement affects the context in which artifacts are located and can reduce or destroy the scientific value of any particular site. A broken artifact in context is worth more than a whole artifact in another location. How great the effect of displacement is thus dependent on the aforementioned conditions and treatment methods, as well as the site's extant integrity. Stable, stratified buried sites are rare in any case; therefore, the impact from equipment may not do more than what natural post-depositional processes have donealready. However, should a rare stable buried site be churned up by repeated passes of tracked harvesters, or subjected to deep incisions by repeated log skidding, the site may lose all scientific value through the destruction of its archaeological matrix. To a lesser extent, compaction by heavy vehicles may not churn soil, but could distort strata within the soil matrix. It would be difficult to predict with any reasonable certainty just how much information loss would result from a singular vehicle track across a site given the unknown particulars of any potential feature or site context. Guessing at that level becomes a futile exercise akin to site divination. Suffice to say, direct effects to archaeological sites from mechanical logging activities can range from non-existent to total loss.

For the South Fork Stillaguamish Vegetation Project, the prescription for cable logging has been specifically designed so as to minimize the potential adverse impacts to the soil surface. Where cable-harvesting systems are used, logs would be yarded with either full or single-end suspension. Where cable corridors cross no-cut riparian buffers, full suspension of the logs would preclude any surface affect. Any trees felled for corridors within riparian no-cut buffers would be left on the ground, also precluding the displacing/dislodging effects of skidding. Additionally, where ground-based logging systems are used, felling will be accomplished in a single pass of equipment, thus avoiding the deep trenching that has occurred in previous harvesting events.

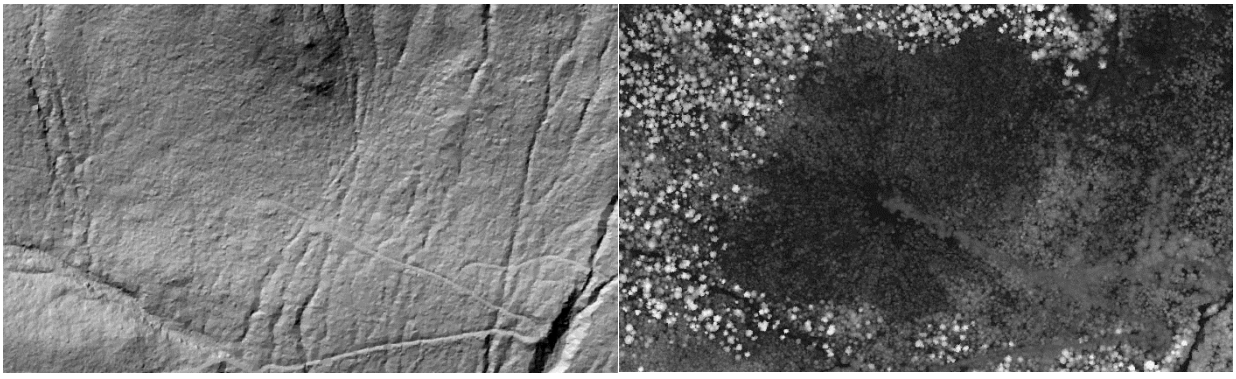

Figure 2. LIDAR images showing shaded slope (left), and canopy height (right). The landing from this 1988 cable logging unit is visible on the left, and the striations resulting from skidding are visible in the subsequent growth pattern of the current canopy on the right.

Indirect Effects

Indirect effects can range in scope from site-specific to broadly regional. Should artifacts be exposed by vegetation removal or soil displacement, they are more likely to be picked up by the public, or the loggers themselves (Bryant, Gehr and Flenniken 1982). Exposure also subjects the

site to erosion, which further displaces and destroys the archaeological matrix. Increased exposure to weathering also poses a risk as organic materials such as woven fibers, wood, bark, and bone implements often deteriorate quickly once exposed to the surface. A less obvious indirect effect is that of destruction to site integrity by altering the viewshed or other nearby conditions. Sites are evaluated under certain criteria for their eligibility to the National Register of Historic Places (NRHP); however, they also must retain integrity to convey that significance. There are seven aspects per National Register Bulletin 15; location, design, setting, materials, workmanship, feeling, and association. Removal of vegetation can affect the setting and feeling of a site to a degree that it would constitute an adverse effect. With most archaeological sites, this is unlikely. This is more likely to affect historical sites with standing features that rely on the environmental setting to convey its place in history. It is most likely to affect certain indigenous "traditional cultural properties" where conditions within the site require a degree of wildness and/or solitude. Indirect effects of integrity are generally ascertained through consultation and not through the direct identification of sites within the project area.

Non-commercial Thinning

Non-commercial thinning stands would be accessed by foot, treated by chainsaws, and would not require skidding. Direct effects are negligible among low-profile site such as lithic scatters or other non-architectural sites. Standing architecture would be at risk from tree felling but also easily avoided. Indirect effects resulting from erosion and artifact exposure are also less due to the retention of woody material on the surface. Conversely, the debris would protect unobtrusive sites from visibility, access, and erosion.

Non-commercial thinning is a low risk activity exempt from review per the Programmatic Agreement, Appendix A, Ecology, Range & Watersheds, section 2.f, and Timber, section 1.

Temporary Roads

The project proposal includes the construction of temporary roads for access to potential treatment units within the analyzed stands. As much of the area is already traversed by a network of earlier logging roads, almost all temporary roads are proposed over an extant system. Consequently, only1.2 miles of new construction are proposed, all of which are constrained within the analyzed potential treatment stands. The proposed new roads are limited to areas of high slope and low probability for significant sites. The potential effects were considered as part of the associated treatment stands.

Decommissioned roads that are proposed for reconstruction as temporary roads, and again decommissioned are a negligible risk to historic properties and exempted from further review per 36CFR800.3(a)(1).

Road Maintenance Levels

As part of the vegetation management activities, the project proposes to change the maintenance levels of the official road system within the South Fork Stillaguamish watershed. The ground disturbing activities that would result from the administrative changes are not specifically known, as the conditions of all roads have not been ascertained. As many of the roads are already overgrown and impassable, most that are proposed for closure may see little change for the next decade. However, some roads may be upgraded for thinning unit access then closed or

decommissioned after implementation. Other roads may be opportunistically closed during project implementation as needs such as the removal of fish barriers are discovered.

Risks associated with the changes in maintenance level stem fromarange of possibleactionsdescribed in Appendix A. Active treatments are the types that pose the highest direct risk to cultural resources, as those are the treatments that involve ground disturbance. Passive treatments can also pose indirect effects to historic properties if the road is considered a significant site and is allowed to deteriorate resulting in "demolition by neglect" per 36 CFR 800.5 (a)(2)(vi).The "loss of access" effect described in the "no action" alternative also applies to this alternative. These only apply to known sites.

Potential adverse effects associated with road decommissioning are relatively low in most areas. Primarily, this stems from the fact that roads are extant features that were already subjected to substantial ground disturbance in most cases, especially in steep terrain.However, in flatter terrain where less leveling or grading is needed, roads may be little more than cleared two-tracks and retain some potential for intact archaeological features. In those cases, road construction may have exposed buried archaeological materials without entirely destroying a site. In places with level and paved roads, archaeological materials may have been capped and risk being displaced or damaged during the removal and decompaction process.

The Programmatic Agreement accountsfor the overall low potential for historic properties within existing roadbeds, and the consequential low potential for adverse effects of road decommissioning without dismissing it entirely. Appendix B of the PA describes low risk actions that do not require case-by-case review by the SHPO, but still require either a pre-inspection or monitoring during implementation. Road decommissioning is included in this Appendix under Ecology, Range, and Watershed, section 4.While most of the proposed road changes would fall under this section, those decommissioned roads that are proposed for reconstruction as temporary roads, then decommissioned again, are a negligible risk to historic properties and exempted from further review per 36CFR800.3(a)(1). The remainder would be inspected or monitored per the terms of the PA as specific treatments are devised. Appendix B is a list of the proposed road maintenance levels. The table includes a column denoting if the road requires pre-inspection or monitoring, or if the road has been exempted from further review.

Recreational Activities

Relocation of the Sunrise Mine and Walt Bailey (Mallardy Ridge) trailheadshave the potential to damage or destroy archaeological sites through the construction of parking areas. As both locations are proposed partially within existing road grades, the impact would be limited to only those areas outside of the previous disturbance. Both locations were surveyed as part of this project. Neither location yielded evidence of cultural resources.

Specific Resources Concerns

Noknown significant sites are located within the proposed treatment stands or areas of proposed road construction or decommissioning. The records search identified one significant pre-contact archaeological site (Lake 22 Lithic Scatter) within the broad watershed analysis area. It is not within a potential treatment stand or road, and would not be directly or indirectly affected by project activities. Two significant historical sites, the Monte Cristo and Everett Railroad and the Verlot Public Service Center, are also within the project analysis area but are not within proposed

treatment areas. The Verlot Public Service center is listed on the NRHP, and the former railroad is unevaluated. As neither are within potential treatment areas, they have been considered for potential indirect effects related to changes in the setting. Indirect effects would include a slight alteration to the existing setting by the removal of trees in nearby stands. As both sites date to a period of heavy logging in the valley, the thinning of trees would not constitute an adverse effect. Rather it could be considered visually reminiscent of the historical conditions. Nonetheless, the project is being designed to meet visual management objectives along the Mt. Loop Scenic By-way. The objectives would minimize obtrusiveness of treatments among the recreating public.

In addition to archaeological and historical sites, a broad traditional use area defined by the Samish tribe during the 1981 survey of AIRFA sites was identified overlapping the project analysis area. The Samish Tribal Historic Preservation Officer confirmed that there were no concerns regarding cultural resources for this project.

SHPO Concurrence

Consultation with the Washington State Historic Preservation Office hasbeen completed. SHPO concurred with the determination of *no historic properties affected* in regards to the proposed commercial thinning and trailhead relocation activities. A copy of the concurrence letter dated December 7, 2016 can be found in the project record.

Cumulative Effects

Archaeological sites are non-renewable resources that are being lost with an increasing frequency to alteration or destruction. However, current projects and those in the foreseeable future are given the same consideration per cultural resource laws in regards to potential adverse effects. No known projects are planned or predicted within the project area that would result in adverse effects to historic properties.

Forest Plan Consistency

All Alternatives would be consistent with the standards and guidelines of the Forest Plan, as amended.

Public Comment Response

There have been no comments regarding cultural resources from the public.

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Appendix A: Proposed Road Treatment Types and Associated Ground-Disturbing Activities

Descriptor	Treatment Name and Description	Treatments by Maintenance Level		
		Decommissioned Roads ML0	Closed Roads ML1	Open Roads ML2-5
P[1]1	Road has not been used in recent past, vegetation has naturally overgrown the roadbed and natural drainage patterns are functioning at a high level. Appropriate on roads past active treatment areas.	X	X	
A1[23]	Active Entrance Treatment – gate, berm, or otherwise block entire width of roadway. Road is allowed to revegetate naturally, and drainage patterns are allowed to function as-is.	X	X	
A2	Active Treatment – gate, berm, or otherwise block entire width of roadway. Would also include additional treatments from the following list:	X	X	
	Full Width Decompaction – complete disturbance (de-compaction) of the entire width of the roadway for up to 18" depth by mechanical construction equipment. (This includes commonly describe techniques such as "Pavement Ripping" where asphalt pavement exists.)	X		
	Partial Area Decompaction (Craters) – localized, relatively small (approx. 3' x 3' wide) patterned de-compacted zones (known as "craters") established by mechanical construction equipment in the roadbed (aka moonscaping).	X		
	Minor Drainage Improvements – generally include the construction of water-bars, swales, rolling dips, and other water conveyance techniques to minimize localized erosion potential.	X	X	
	Minor Fill Removal/Stabilization – generally involves localized removal of unstable fills and pulling back road shoulders in hill-side construction areas where cut/fill techniques were used to balance cuts and fills. The intent in this case is not to fully restore natural (pre-road construction) contours.	X	X	
	Minor Culvert Removal – for both cross-drains and stream crossings generally involves removal of smaller diameter pipes (less than 36") and shallow fills (less than 10 ft), stabilization of adjacent slopes, re-establishment of natural drainage patterns.	X	X	
	Major Culvert Removal – for both cross-drains and stream crossings generally involves removal of large diameter pipes (greater than 36") and deep fills (greater than 10 ft), stabilization of adjacent slopes, re-establishment of natural drainage patterns.	X	X	
	Re-contouring – generally involves complete elimination of the roadbed and re-establishing natural (pre-road construction) contours and slopes. This method is employed on hill-side construction areas where cut/fill techniques were used to balance cuts and fills during construction. The intent is to fully remove the entire presence of the roadbed.	X		
	Bridge Removal – generally includes removal of all portions of a bridge structure including decking, asphalt paving, abutments and other appurtenances.	X	X	

Descriptor	Treatment Name and Description	Treatments by Maintenance Level		
		Decommissioned Roads ML0	Closed Roads ML1	Open Roads ML2-5
	Convert road to trail – activities could include laying back cut banks and moving that material to allow for recontouring the slope. Vegetation would be allowed to revegetate as much as possible to achieve a natural look. Trails could accommodate, but are not limited to hikers, horses, snowmobiles, and dirt bikes.	X	X	
A3	Active Maintenance (e.g., brushing, signing, culvert cleaning) would occur as appropriate and when needed. May also include:			X
	Minor Drainage Improvements – generally include the construction of water-bars, swales, rolling dips, and other water conveyance techniques to minimize localized erosion potential.			X
	Road stabilization – repair existing road failures – includes reconstruction of road, bridge and slope stabilization (e.g., H-Pile wall, wood placement in streams).			X
	Stream crossing structures – would be replaced to meet current standards (e.g. meet 100 year flow and AOP) as funding is available.			X

[1] Treatment descriptors with a “P” refer to passive treatments (non-ground disturbing)

[2] Treatment descriptors with an “A” refer to active treatments (ground disturbing)

[3] Decommissioning of roads using A1 treatment type would not occur within Tier 1 Key Watersheds

Appendix B: Road Maintenance Actions and Survey Needs

ID	NAME	SEGMENT LENGTH	ROUTESTATUS	OPER_MAINT_LEVEL	CurrentML	ProposedML	Drivable	Pre-Inspect/ Monitor
4000035	Tulalip Mill Site Group CG	0.1	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4000040	EswineCG	0.1	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000041	Marten Cr CG	0.109	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000043	Dick Sperry CG	0.1	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000045	Sperry Iverson Parking	0.1	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000050	Marble Gulch Parking	0.035	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000060	Coal Cr Bar CG	0.0617	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000064	Beaver Cr CG	0.1	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000065	Perry Cr CG	0.1	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4000069	DickermanMtn Trailhead	0.1	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4001011	OloMtn	1.9	Ex - Existing	2 - High Clearance Vehicles	2	2		No
4001012	Antler	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1		No
4002000	Turlo Cr CG	0.606	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4003000	Verlot Public Service Center	0.08	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4003000	Verlot Public Service Center	0.1	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4004000	Verlot CG	0.219	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4005000	Benson Cr	2.5	De- Decomm		N/A		No	No
4005011	Elk	0.5	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4005011	Elk	1	Ex - Existing	2 - High Clearance Vehicles	2	2	No	No
4005013		0.2	De- Decomm		N/A		No	No
4005014		0.7	De- Decomm		N/A		No	No
4006000	Lake 22 Parking	0.103	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4008000	Hemple Cr CG	0.3	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4009000	Hemple Cr	1.4	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes

4009000	Hemple Cr	1.6	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4009000	Hemple Cr	0.1	Ex - Existing	2 - High Clearance Vehicles	2	1		Yes
4009021	4009021	0.13	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4012000	Lower Hemple	0.8	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4015000	Upper Hemple	0.12	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4016000	Wiley Creek CG	0.28	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4018000	Gold Basin CG	0.882	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4019000	Gb Mill Pond Parking	0.2	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4020000	Schweitzer Cr	2.4	Ex - Existing	3 - Suitable For Passenger Cars	3	1	No	No
4020000	Schweitzer Cr	2.67	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4020000	Schweitzer Cr	2.23	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4020011	Good Bye	0.9	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4020015	Wisconsin	1.6	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	No
4020023	4020023	1	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4020025	Boardman Lake	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4020230	4020230	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4021000	Bear Lake	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	3	Yes	No
4021000	Bear Lake	2.95	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4021000	Bear Lake	0.75	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4021015	Bear Flat	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4021016	Cedar Flats	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4021018	Rock Ridge	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4021020	Black Cr	1.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4022000	Fat Albert	0.5	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4022011	4022011	0.3	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4024000	Edge	2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4024030	Lone Ranger	0.8	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4026000	Boardman Cr CG	0.97	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4030000	Mallardy Cr	4.845	Ex - Existing	3 - Suitable For Passenger Cars	3	2	Yes	No
4030000	Mallardy Cr	0.7	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No

4030000	Mallardy Cr	0.65	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4030011	Lower Mallardy	0.9	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4030012	Mallardy A	0.6	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4030030	4030030	0.5	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4030035	4030035	0.4	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4030040	4030040	0.6	De- Decomm	2 - High Clearance Vehicles	N/A		No	No
4030042	4030042	0.3	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4030045	4030045	0.4	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4030046	4030046	0.1	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4031000	Bender Cr	0.06	Ex - Existing	1 - Basic Custodial Care (Closed)	1	2A	No	No
4031000	Bender Cr	2.44	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4031000	Bender Cr	1	Ex - Existing	2 - High Clearance Vehicles	2	2A	No	No
4031015	4031015	0.44	Ex - Existing	1 - Basic Custodial Care (Closed)	1	2A	No	No
4031015	4031015	0.16	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4032000	Boardman Ridge	4.06	Ex - Existing	2 - High Clearance Vehicles	2	3	Yes	No
4032000	Boardman Ridge	0.85	Ex - Existing	2 - High Clearance Vehicles	2	C	Yes	Yes
4032030	Boardman Cr	1.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4032035	Bald	0.12	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4032035	Bald	0.18	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4032040	4032040	0.3	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4033000	Solo	0.6	De- Decomm	2 - High Clearance Vehicles	N/A		No	No
4033011	4033011	0.3	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4035000	River Bar CG	0.1	De- Decomm	3 - Suitable For Passenger Cars	N/A			No
4036000	Red Bridge CG	0.5	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4037000	River Road	0.821	Ex - Existing	3 - Suitable For Passenger Cars	3	2A	Yes	No
4037000	River Road	1.439	Ex - Existing	3 - Suitable For Passenger Cars	3	2A	No	No
4037000	River Road	1.15	De- Decomm		N/A		No	No
4037000	River Road	0.09	Ex - Existing	3 - Suitable For Passenger Cars	3	0	No	Yes
4037020	Arm	0.8	De- Decomm		N/A		No	No
4038000	Gordon Cr	1.6	De- Decomm	2 - High Clearance Vehicles	N/A		No	No

4038000	Gordon Cr	2.5	De- Decomm	2 - High Clearance Vehicles	N/A		No	No
4038016		0.3	De- Decomm		N/A		No	No
4039000	Aspen	1.82	De- Decomm	2 - High Clearance Vehicles	N/A		No	No
4040000	Youth On Age Parking	0.2	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4041000	Silver	0.6	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4041014	4041014	0.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4043000	Eldred	1.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4043013	4043013	0.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4044000	4044	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4044014	4044014	0.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4045000	Marten Cr	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0		Yes
4050000	Long Mtn	0.6	Ex - Existing	2 - High Clearance Vehicles	2	0	No	Yes
4052000	Deer Creek	0.171	Ex - Existing	3 - Suitable For Passenger Cars	3	1	Yes	No
4052000	Deer Creek	4	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4052012	4052012 Deer Cr Pkg	0.1	Ex - Existing	2 - High Clearance Vehicles	2	2		No
4052020	Rodent Spur	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4052060	Goodbye	0.7	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4052062	4052062	0.15	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4053000	Rodent	0.8	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4054000	Double Eagle	3	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4057000	Lower Beaver	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4058000	Ice Caves Parking	0.216	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4059000	Big Four Trailhead	0.25	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4060000	Coal Lake	4.86	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4061000	4061	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	2	No	No
4062000	Beaver Cr	0.861	Ex - Existing	2 - High Clearance Vehicles	2	1	Yes	Yes
4062000	Beaver Cr	1.432	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4062012	4062012	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4062014	4062014	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4062016	4062016	0.15	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes

4062020	4062020	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4062021	4062021	0.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4062030	4062030	0.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	2A	No	No
4063000	Perry Cr	0.34	Ex - Existing	1 - Basic Custodial Care (Closed)	1	C	No	No
4063000	Perry Cr	0.68	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4063030	Stalwart	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4065000	Sunrise Mine	1.7	Ex - Existing	3 - Suitable For Passenger Cars	3	2	Yes	No
4065000	Sunrise Mine	0.507	Ex - Existing	3 - Suitable For Passenger Cars	3	C	Yes	Yes
4100000	Tupso Pass	6.4	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4100000	Tupso Pass	7.79	Ex - Existing	3 - Suitable For Passenger Cars	3	3	No	No
4100000	Tupso Pass	1.84	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4	Yes	No
4100020	Alpha	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1		Yes
4100021	4100021	1.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4100024	4100024	0.72	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4100032	Canyon Cr West CG	0.1	Ex - Existing	2 - High Clearance Vehicles	2	0		Yes
4100033	Canyon Cr East CG	0.1	Ex - Existing	2 - High Clearance Vehicles	2	0		Yes
4100035	Liberty Mtn	1.8	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4100037	Dog	0.6	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4100039	4100039	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4100060	4100060	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4110000	Green Mtn	0.98	Ex - Existing	3 - Suitable For Passenger Cars	3	1	No	No
4110000	Green Mtn	2.3	Ex - Existing	3 - Suitable For Passenger Cars	3	1	No	No
4110000	Green Mtn	1.753	Ex - Existing	3 - Suitable For Passenger Cars	3	2	Yes	No
4110000	Green Mtn	5.967	Ex - Existing	3 - Suitable For Passenger Cars	3	2	Yes	No
4110011	Green Boundary	0.5	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4110014	Lower Green Mtn	0.165	Ex - Existing	1 - Basic Custodial Care (Closed)	1	2A	No	No
4110014	Lower Green Mtn	0.335	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4110014	Lower Green Mtn	2.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4110015	4110015	0.26	Ex - Existing	1 - Basic Custodial Care (Closed)	1	2A	No	No
4110016	4110016	0.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes

4110018	4110018	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4110024	W Pt Green Mtn	1.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4110025	4110025	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4110027	Ember	0.5	Ex - Existing	2 - High Clearance Vehicles	2	1	No	No
4110031	Green Mtn Vista	0.7	Ex - Existing	2 - High Clearance Vehicles	2	2A	Yes	No
4110035	4110035	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4111000	Canyon Lake	3.85	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4111000	Canyon Lake	0.05	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4111016	4111016	0.7	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4111020	Fable	0.57	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4111020	Fable	0.13	Ex - Existing	1 - Basic Custodial Care (Closed)	1	0	No	Yes
4111021	4111021	1.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4113000	Green Diamond	0.8	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4113000	Green Diamond	1.8	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4113012	Airplane Ridge	0.6	Ex - Existing	2 - High Clearance Vehicles	2	1	No	No
4113012	Airplane Ridge	0.7	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4113014	4113014	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4113020	4113020	0.1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4114000	Upper Benson	1.7	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4114011	Hawk	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4120000	Diamond	4.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4120000	Diamond	2.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4120016	4120016	0.6	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4120060	4120060	0.4	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4120100	4120100	0.6	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4122000	4122	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4130000	S Fk Canyon Cr	2.6	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4130000	S Fk Canyon Cr	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4131000	4131	2.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4140000	Stirrup	1.7	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No

4140000	Stirrup	1	Ex - Existing	2 - High Clearance Vehicles	2	2	No	No
4140011	4140011	0.6	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4150000	N Fk Canyon Cr	5.5	Ex - Existing	3 - Suitable For Passenger Cars	3	3	No	No
4150015	4150015	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4150020	Ascot	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4150030	4150030	0.8	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4150036	4150036	1	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4150040	4150040	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4151000	Lower Meadow Cr	1.8	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4151020	4151020	0.3	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4152000	West Ditney	0.6	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4152011	4152011	0.2	De- Decomm	1 - Basic Custodial Care (Closed)	N/A		No	No
4160000	Bandana	1	Ex - Existing	2 - High Clearance Vehicles	2	2	No	No
4160000	Bandana	0.4	Ex - Existing	2 - High Clearance Vehicles	2	2	No	No
4200000	Pilchuck	1.4	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4200000	Pilchuck	5.6	Ex - Existing	3 - Suitable For Passenger Cars	3	3	Yes	No
4210000	Lower Pilchuck	3.15	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4210000	Lower Pilchuck	0.05	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4210099	Rotary	1.06	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4220000	Jode	0.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4220012	Jode Too	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4230000	Dart	1.5	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	Yes
4230020	Dart Too	0.2	Ex - Existing	1 - Basic Custodial Care (Closed)	1	1	No	No
4239000	West Boundary	0.5	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4240000	West Pilchuck	0.962	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4240000	West Pilchuck	0.238	Ex - Existing	2 - High Clearance Vehicles	2	2A	No	No
4241000	4241	0.3	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes
4242000	4242	0.2	Ex - Existing	2 - High Clearance Vehicles	2	1	No	No
4250000	Hawthorn	1.07	Ex - Existing	2 - High Clearance Vehicles	2	0	No	Yes
4250000	Hawthorn	0.63	Ex - Existing	2 - High Clearance Vehicles	2	1	No	Yes

4000060-A	Coal Cr Bar CG-A	0.0507	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4003000-A	Verlot Public Service Center-A	0.08	Ex - Existing	3 - Suitable For Passenger Cars	3	3		No
4004000-A	Verlot CG Spur -A	0.085	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4018000-A	Gold Basin CG-A	0.242	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4018000-B	Gold Basin CG-B	0.265	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4018000-C	Gold Basin CG-C	0.0392	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No
4018000-D	Gold Basin CG-D	0.1123	Ex - Existing	4 - Moderate Degree Of User Comfort	4	4		No